

Appl. No. 10/618,060
Amdt. dated July 6, 2006
Preliminary Amendment

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

- 1 Claims 1-15 (Cancelled).
- 1 16. (New) A system design method comprising:
- 2 receiving a system design including components connected via component ports
- 3 from a system designer;
- 4 for each of the component ports, identifying a set of alternative
- 5 bus/communication protocols supported by the component port;
- 6 comparing the sets of alternative bus/communication protocols of the component
- 7 ports to identify a subset of the bus/communication protocols supported by all of the component
- 8 ports; and
- 9 selecting one of the subset of the bus/communication protocols to implement
- 10 connections between the components via the component ports.
- 1 17. (New) The system design method of claim 16, wherein comparing the sets
- 2 of alternative bus/communication protocols comprises:
- 3 comparing a parameter value of a first one of the set of alternative
- 4 bus/communication protocols supported by a first one of the component ports with
- 5 corresponding parameter values of each of the sets of alternative bus/communication protocols
- 6 supported by the other component ports to identify the subset of the bus/communication
- 7 protocols having compatible parameter values.
- 1 18. (New) The system design method of claim 16, wherein comparing the sets
- 2 of alternative bus/communication protocols comprises:
- 3 comparing a operation of a first one of the set of alternative bus/communication
- 4 protocols supported by a first one of the component ports with corresponding operations of each
- 5 of the sets of alternative bus/communication protocols supported by the other component ports to
- 6 identify the subset of the bus/communication protocols having compatible operations.

Appl. No. 10/618,060
Amdt. dated July 6, 2006
Preliminary Amendment

PATENT

1 19. (New) The system design method of claim 18, wherein the subset of the
2 bus/communication protocols having compatible operations includes a first operation associated
3 with a first one of the component ports and a complementary operation associated with at least
4 one of the other component ports.

1 20. (New) The system design method of claim 16, wherein comparing the sets
2 of alternative bus/communication protocols comprises:

3 comparing a connection value of a first one of the set of alternative
4 bus/communication protocols supported by a first one of the component ports with
5 corresponding connection values of each of the sets of alternative bus/communication protocols
6 supported by the other component ports to identify the subset of the bus/communication
7 protocols having compatible connection values.

1 21. (New) The system design method of claim 18, wherein the subset of the
2 bus/communication protocols having compatible connection values includes an input for a first
3 operation associated with a first one of the component ports and an output for the first operation
4 associated with at least one of the other component ports.

1 22. (New) The system design method of claim 16, wherein comparing the sets
2 of alternative bus/communication protocols comprises:

3 comparing a role value of a first one of the set of alternative bus/communication
4 protocols supported by a first one of the component ports with corresponding role values of each
5 of the sets of alternative bus/communication protocols supported by the other component ports to
6 identify the subset of the bus/communication protocols having compatible role values, wherein
7 each role value is associated with at least one connection value, wherein each connection value is
8 associated with at least one operation, wherein each operation is associated with at least one
9 parameter value.

1 23. (New) The system design method of claim 16, wherein selecting one of
2 the subset of the bus/communication protocols to implement connections between the
3 components via the component ports comprises:

4 determining the number of bus/communication protocols included in the subset;

Appl. No. 10/618,060
Amdt. dated July 6, 2006
Preliminary Amendment

PATENT

5 in response to the subset having a single bus/communication protocol, selecting
6 the single bus/communication protocol; and

7 in response to the subset being an empty set, notifying the system designer that
8 the connections between the components via the component ports cannot be made.

1 24. (New) The system design method of claim 23, further comprising:
2 in response to the subset including at least two bus/communication protocols,
3 automatically selecting one of the subset of the bus/communication protocols to implement
4 connections between the components via the component ports.

1 25. (New) The system design method of claim 23, further comprising:
2 in response to the subset including at least two bus/communication protocols,
3 presenting the subset to the system designer; and
4 receiving a selection from the system designer of one of the subset of the
5 bus/communication protocols to implement connections between the components via the
6 component ports.

1 26. (New) The system design method of claim 16, wherein identifying a set of
2 alternative bus/communication protocols supported by the component port comprises:
3 for each component port, retrieving corresponding component information from a
4 component library storing previously defined component information, wherein the corresponding
5 component information specifies at least a portion of at least one bus/communication protocol
6 supported by the component port.

1 27. (New) The system design method of claim 26, wherein the component
2 library is stored in a database.

1 28. (New) The system design method of claim 26, wherein the component
2 information specifies at least a portion of at least one bus/communication protocol in an XML
3 format.

1 29. (New) The system design method of claim 16, wherein at least one of the
2 connections is between two components within a programmable logic device.

Appl. No. 10/618,060
Amdt. dated July 6, 2006
Preliminary Amendment

PATENT

1 30. (New) The system design method of claim 16, wherein at least one of the
2 connections is between a component within a first programmable logic device and a component
3 external to the first programmable logic device.

1 31. (New) The method of claim 16, further comprising:
2 analyzing the selected one of the subset of bus/communication protocols to
3 identify a first set of connections defined by the selected one of the subset of bus/communication
4 protocols;

5 analyzing the component ports of the components to identify the connections used
6 by the component ports of the components for the selected one of the subset of
7 bus/communication protocols; and

8 comparing the connections used by the component ports of the components with
9 the first set of connections to determine a portion of the first set of connections necessary to
10 implement the connections.